








Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p>THIS MATERIAL IS TOXIC BY INHALATION. Highly toxic; do not ingest or inhale. Avoid all contact with this material. Combustible material; avoid heat and sources of ignition. Irritating to skin, eyes, and the respiratory system. Environmental hazard. This material is very toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment. Moisture sensitive material.</p>	   

Section I. Chemical Product and Company Identification			
Chemical Name	Acetone Cyanohydrin		
Catalog Number	M0361	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	2-Hydroxyisobutyronitrile; 2-Methyl-lactonitrile		
Chemical Formula	C ₄ H ₇ NO		
CAS Number	75-86-5	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients				
Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Acetone Cyanohydrin	75-86-5	Min. 96.0 (T)	Not available.	Rat LD ₅₀ (oral) 5.9 mg/kg Rabbit LD ₅₀ (dermal) 17 µL/kg Rat LD ₅₀ (subcutaneous) 8500 µg/kg

Section III. Hazards Identification	
Acute Health Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures	
Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data			
Flammability	Combustible.	Auto-Ignition	688 °C (1270.4 °F)
Flash Points	78 °C (172.4 °F)	Flammable Limits	LOWER: 2.2% UPPER: 12%
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂). WARNING: Very toxic cyanide gas may be produced in a fire. Do not inhale.		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		

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Emergency phone number (800) 424-9300

Fire Fighting Media
and Instructions

SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Consult with local fire authorities before attempting large scale fire-fighting operations.

Section VI. Accidental Release MeasuresSpill Cleanup
Instructions

This material is toxic by inhalation. Highly toxic material. Combustible material. Irritating material. Environmentally hazardous material. Moisture sensitive material.
Keep away from heat. Mechanical exhaust required. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and StorageHandling and Storage
Information

TOXIC BY INHALATION. HIGHLY TOXIC. COMBUSTIBLE. IRRITANT. ENVIRONMENTAL HAZARD. MOISTURE SENSITIVE. Keep locked up. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively.
Always store away from incompatible compounds such as oxidizing agents, reducing agents, acids, alkalis (bases), moisture.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.

Personal Protection

Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.



Exposure Limits

Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C

Liquid. (Clear, colorless ~ pale yellow.)

Solubility

Freely soluble in water and in the usual organic solvents. Miscible with alcohol, ether. Practically insoluble in petroleum ether, carbon disulfide.

Specific Gravity

0.93 (water=1)

Molecular Weight

85.10

Partition Coefficient

LOG P_{ow}: -0.03

Boiling Point

82°C (179.6°F) @ 23 mmHg

Vapor Pressure

3.0 kPa (@ 20°C)

Melting Point

-19°C (-2.2°F)

Vapor Density

2.93 (Air = 1)

Refractive Index

1.40

Volatility

Not available.

Critical Temperature

Not available.

Odor

Characteristic.

Viscosity

Not available.

Taste

Not available.

Section X. Stability and Reactivity Data

Stability

This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability

Avoid excessive heat and light. Decomposes in contact with water.

Incompatibilities

Reactive with oxidizing agents, reducing agents, acids, alkalis (bases), moisture.

Section XI. Toxicological Information

RTECS Number

OD9275000

Routes of Exposure

Eye Contact. Ingestion. Inhalation.

Toxicity Data

Rat LD₅₀ (oral) 5.9 mg/kg
Rabbit LD₅₀ (dermal) 17 µL/kg
Rat LD₅₀ (subcutaneous) 8500 µg/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Acute Toxic Effects

Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.


Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Acetone cyanohydrin's production and use as a chemical intermediate or solvent may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 0.75 mm Hg at 25 deg C indicates acetone cyanohydrin will exist solely as a vapor in the ambient atmosphere. Vapor-phase acetone cyanohydrin will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 14 days. If released to soil, acetone cyanohydrin is expected to rapidly react with water based on a hydrolysis rate of 4.47 1/hr (half-life 9 minutes) at pH 7.2 and 26 deg C. Volatilization from moist soil surfaces is expected based upon an estimated Henry's Law constant of 1.3X10 ⁻⁵ atm-cu m/mole. If released into water, acetone cyanohydrin will react rapidly with water and will not adsorb to suspended solids or sediment, volatilize or bioconcentrate. Occupational exposure to acetone cyanohydrin may occur through inhalation and dermal contact with this compound at workplaces where acetone cyanohydrin is produced or used.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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Section XIV. Transport Information

DOT Classification	DOT CLASS 6.1: Toxic material
PIN Number	FORBIDDEN
Proper Shipping Name	FORBIDDEN
Packing Group (PG)	FORBIDDEN
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). On NDSL.
EINECS Number (EEC)	200-909-4
EEC Risk Statements	R26/27/28- Very toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R50- Very toxic to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. 2-1539

Section XVI. Other Information

Version 1.0
Validated on 6/27/2011.
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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.